

#### ABSTRACT

A cross-linked, supported polybenzimidazole membrane for gas separation is prepared by layering a solution of polybenzimidazole (PBI) and  $\alpha,\alpha'$ -dibromo-p-xylene onto a porous support and evaporating solvent. A supported membrane of  
5 cross-linked poly-2,2'-(m-phenylene)-5,5'-bibenzimidazole unexpectedly exhibits an enhanced gas permeability compared to the non-cross linked analog at temperatures over 265°C.